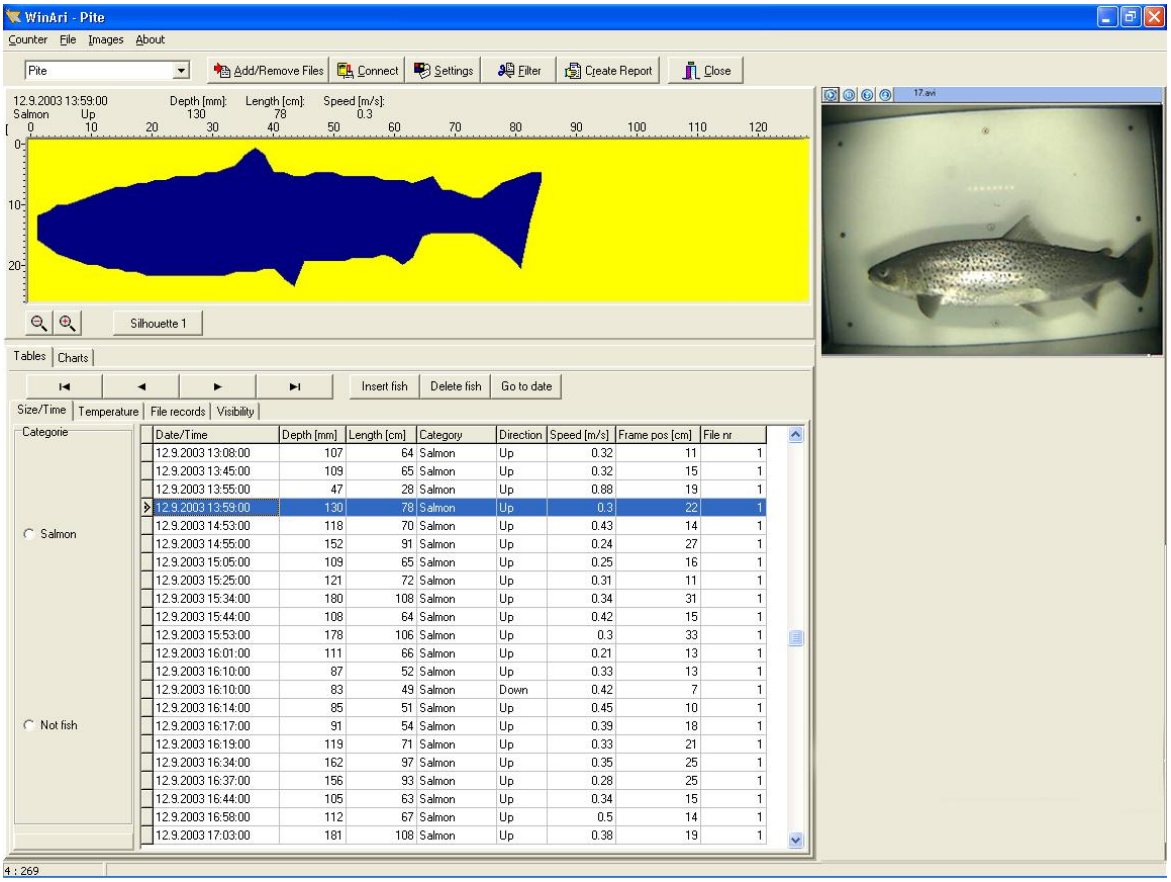
User Manual for Winari PC program

Riverwatcher Fish Counter



Winari PC Program

Version 4.33

Table of Contents

The RiverWatcher Fish Counter 3
The Riverwatcher Program for Windows 95/98/W2/XP 3
1. Getting started 4
1.1 Installation 4
1.1.1 No data available or a first time user. 4
1.1.2 You have previous data you want to upgrade with your program. 10
1.2 Installing newer version 10
2. Using the program 12
2.1 The Winari Program interface: 12
2.2 The Toolbars 12
2.2.1 Counter 13
2.2.2 File 13
2.2.3 Images 14
2.2.4 About 14
2.3 The silhouette image field 15
2.3.1 The Window 15
2.3.2 Add/Remove files 15
2.3.3 Connect 15
2.4 Settings 18
2.4.1 Size Groups 18
2.4.2 Communication 19
2.4.3 Categories 19
2.4.4 Camera images 19
2.4.5 Charts 20
2.4.5.1 TIME CHART: 20
2.4.5.2 LENGTH CHART 20
2.4.5.3 PRINT MARGINS 20
2.4.6 Report settings: 21

2.4.7 Filter 21
2.5.1 PRINT 21
2.5.2 EXIT 21
2.6 Silhouette 21
2.7 Table field 22
3.7.1. Size/Time: 22
3.7.2. The temperature 23
3.7.3. ”File records” 23
3.7.4. The ”Visibility” 23
2.8 The Chart field 24
3.8.1 Stacked Chart 24
3.8.2. Time Chart 25
3.8.3. Migration Chart 26
3.8.4. Length Chart 26
3.8.5. Year Comparison Chart 27
3 Underwater camera connection (optional) 28
4 Error sources 30
4.1 Error in line 30

The RiverWatcher Fish Counter

The Riverwatcher Program for Windows 95/98/W2/XP

The RiverWatcher is a Fish Counter for use in fish ladders, barrier dams or other places where fish swim through a restricted passage. Various versions are available, and the counter can be adapted to local conditions in each individual instance. The RiverWatcher consists of a Control Unit with software, a Scanner Unit with cables, solar-panel, batteries and a computer program for processing the data.

The Scanner Unit can be thought of as a gate that is placed in the fish ladder. It controls the emissions of infrared light beams from the light-emitting one side of the Scanner Unit and the signals from the receivers on the other side of the unit.

When a fish swims through the Scanner Unit it interrupts the beams, the silhouette of the fish being used to count it and calculate its size. One cable runs between the Scanner plates, and there is one cable connecting the Scanner to the Control Unit. Data sent from the Scanner Unit to the Control Unit, which can then be transferred to a computer program, consist of: the height of the fish, the date and time it swam through the Scanner Unit, the temperature of the river, the results of a vision test which is carried out at regular intervals to check on the condition of the Scanner Unit's light-emitting diodes and a silhouette image of every fish so the counting's can be verified afterwards.

1. Getting started

The program can be reach by contact VAKI by info@vaki.is or on VAKI webpage.http://vaki.is/media/misc/winari_setup4_330.exe.

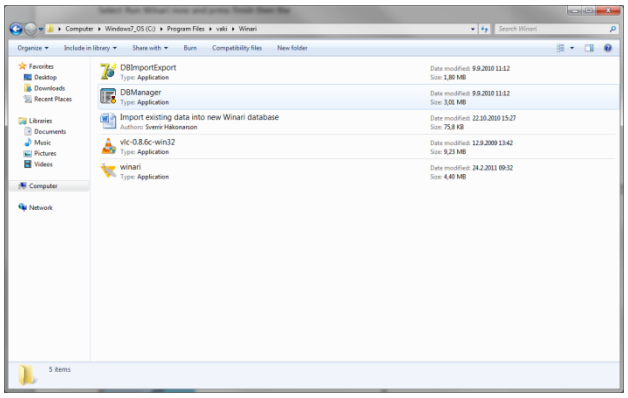
Please select one of the bullets point below before installing the program that fit your situation and after that follow the correct installation practice.

1. No data available or a first time user.
2. You have previous data you want to upgrade with your program.
3. Starts again however not overwrite files.

1.1 Installation

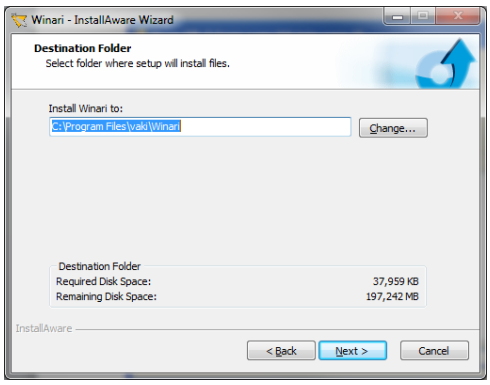
1.1.1 No data available or a first time user.

Download program from webpage or via e-mail. When the program is run this window opens. This is done in four steps.

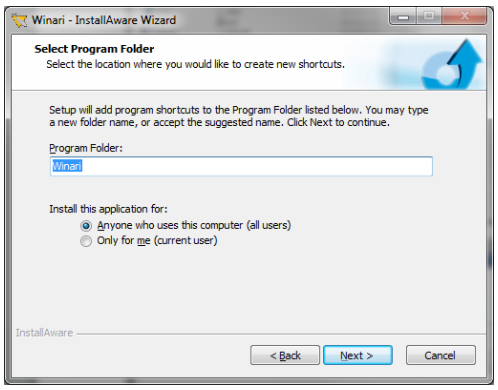


1. Download program from webpage or via e-mail. VAKIWinari file is saved in Program file and under VAKI and Winari folder.

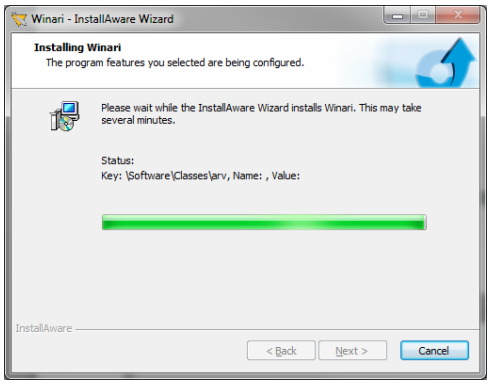
2. Run winari_setup. The type: Applicatio. Click onwinari_setup logo and run it.



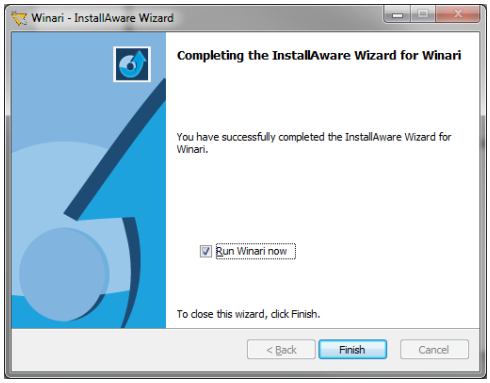
3. Then the following window should open. Make sure the Winariis installed to C:\Program Files\vaki\Winari. Then press next.



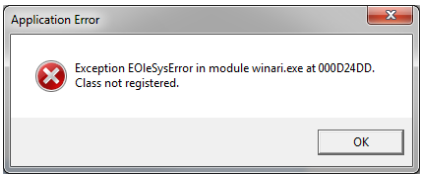
4. The Program Folder should be Winari. Choose to install this application for either all user or just current user. Then press next.



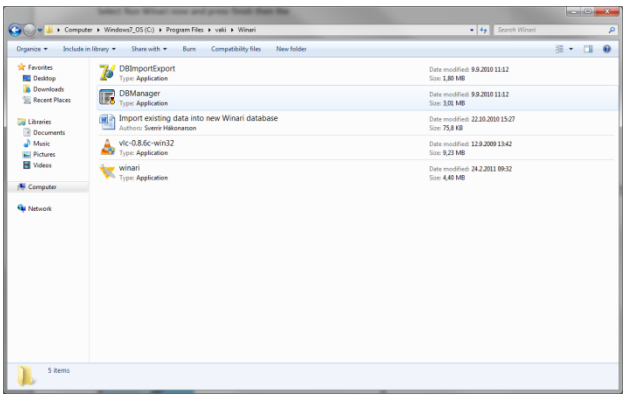
5. The installing window will show up. Click next when the installation is finished.



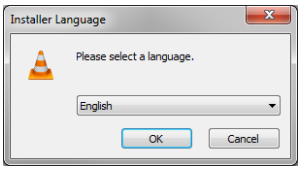
6. Next select Run Winari now and press finish. Then the VAKIWinari is installed.



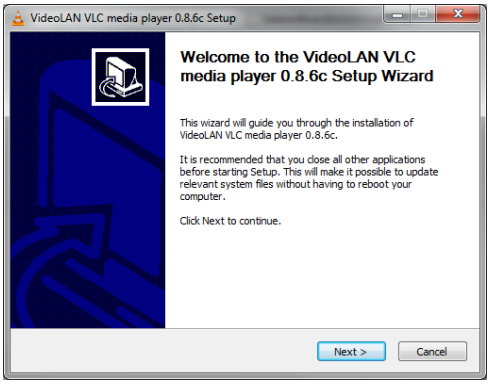
7. To active the video function of Winari it is necessary to install vlc. If this program is not installed Winari will show this error sign.



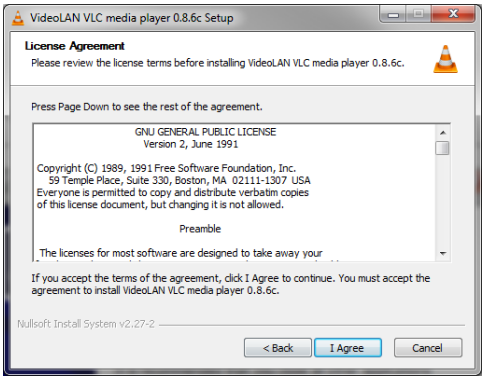
8. To install vlc open the vaki\winari file og to Program files\Vaki\winari select Vlc to install.



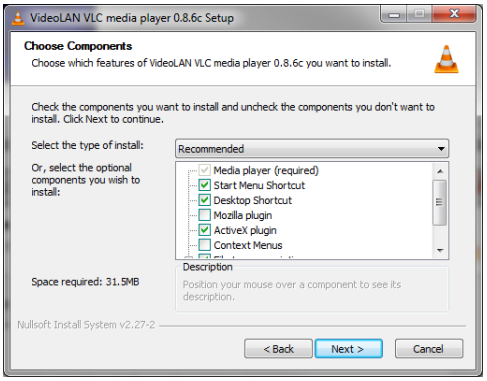
9. Then Installer Language window will show up. Select language.



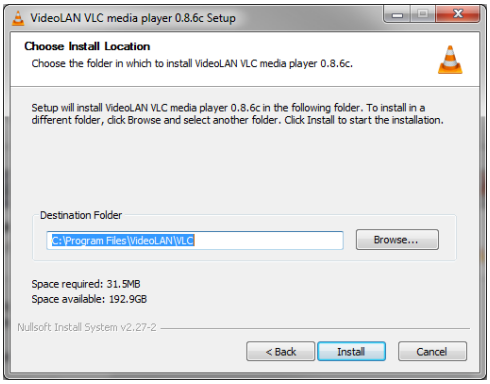
10. Click on next to continue on the welcome to Video LAN VLC media player setup window.



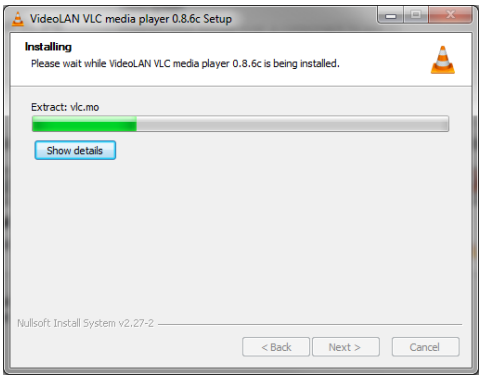
11. Agree the License Agreement by clicking next to continue.



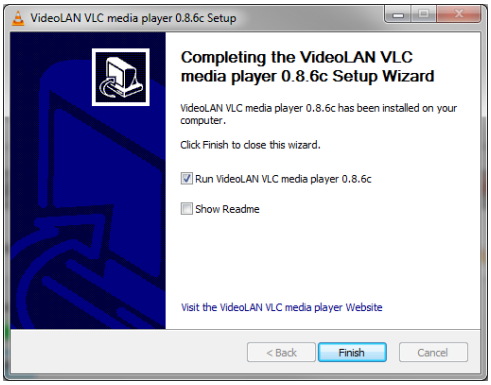
12. Choose the Components select type of install is “Recommended” and then press next.



13. Choose Install Location and let the destination folder be C:\Program File\VideoLAN\VLC and press Install.



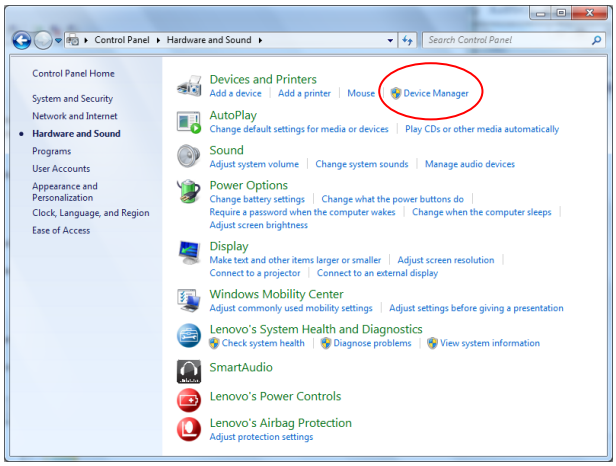
14. The installing window will show up. Just wait for the program to be installed. Press next when the Installation is finished



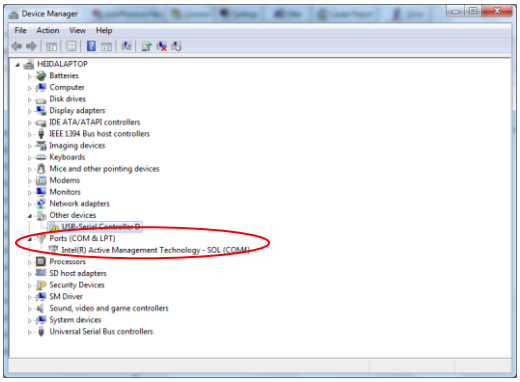
15. Select Run Video LAN VLC media player and press Finished.

1. Com port

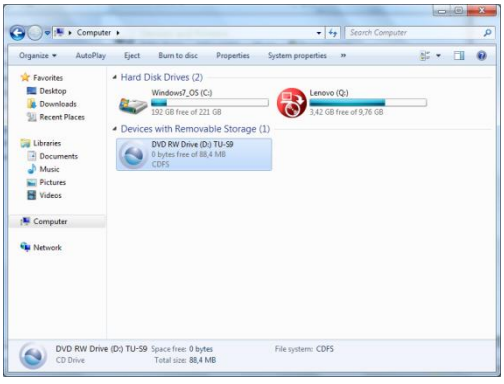
To connect the computer to the fram without internet conection usb serial convertor needs to be innstalled in the computer. Insert the usb converter CD that was deliverd with the with the frame. It is not from any specific producer so the installation could be sligtly different. Run the cd from the Removable Storage



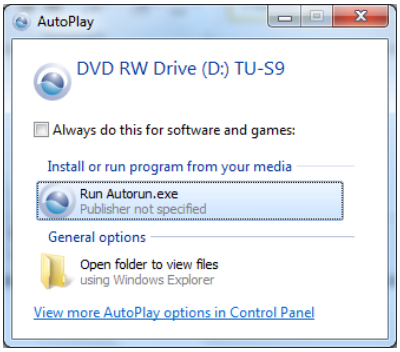
16. Check if there comperter er already insert.
    Go to control Panel\Device Manager\ dobble click in Device Manager.



17. Select ports and see if there are Comm port there. If the are not you have to install it.

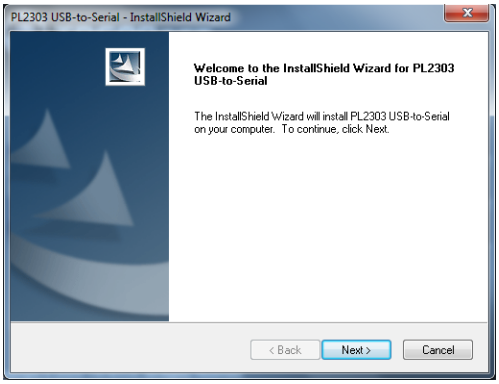


18. If the program is not installed insert the CD to the computer and run it.

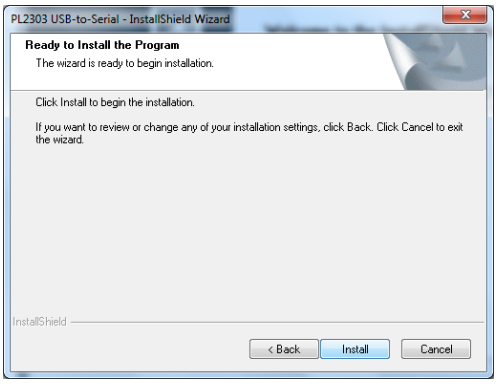


19. Dobble click on Run Autorun and press yes on the Run button.

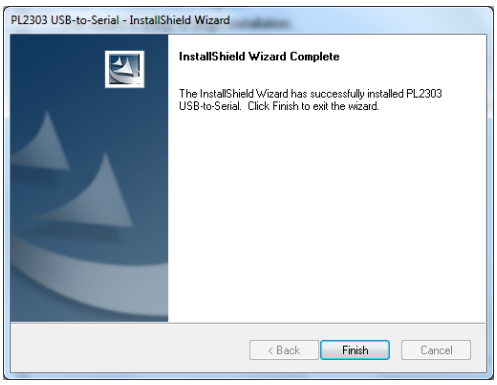
20. For this Converter click on Install Driver



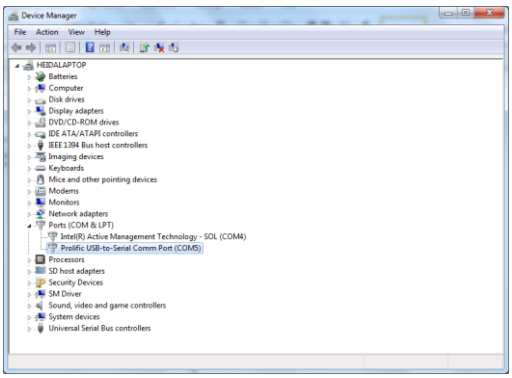
21. Press next on the wolcome window.



22. Select install to install the program.



23. To finish the installation press the finish button.

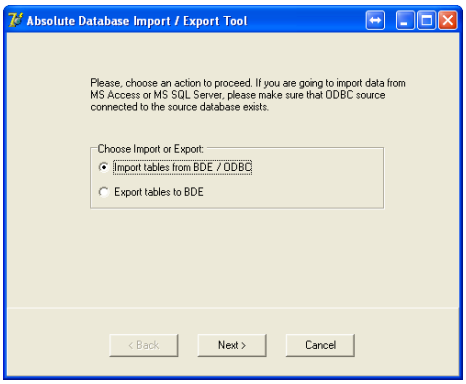


24. To make sure the USB to serial program is installed go to the Device manager again and check it.

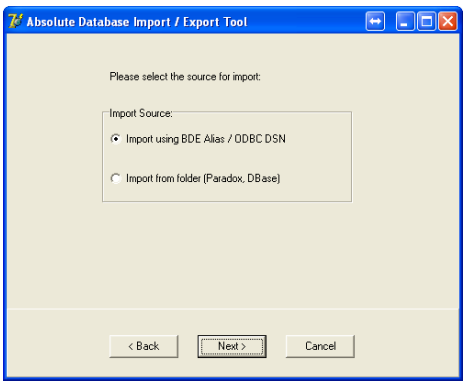
1.1.2 You have previous data you want to upgrade with your program.

1.2 Installing newer version

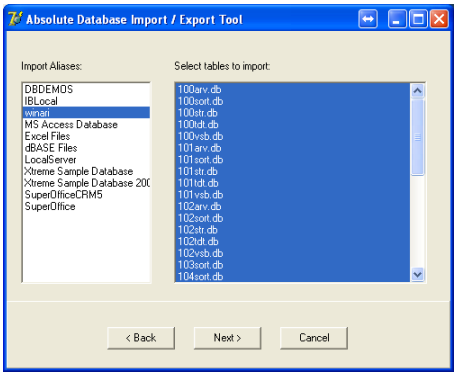
Import existing data into new Winari database



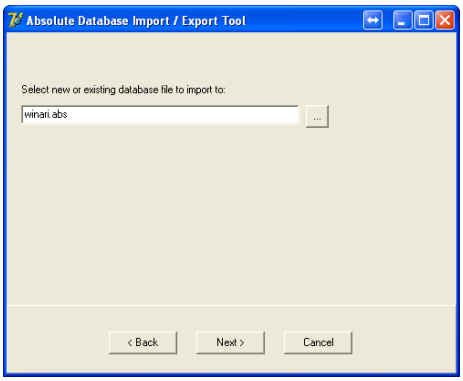
1. If there are upgrading Winari and have already winari data you need to import exsisting data into the new data base that is done with the program DBimportexport.



2. Choose Import tables from DBE/ODBC and press Next



3. Choose Import using DBE Alias / ODBC DSN and press Next



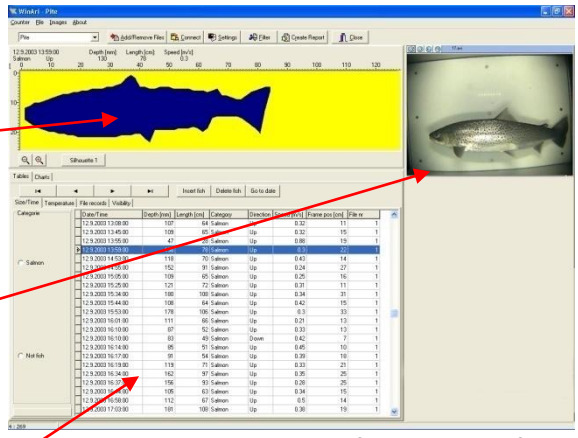
4. Choose winari as import aliases and select all tables to import and click Next

   Write winari.abs in the database file field and click next. The program will now import all Winari data into database. Click Finish. Now the data will be accessible in Winari.

2. Using the program

2.1 The Winari Program interface

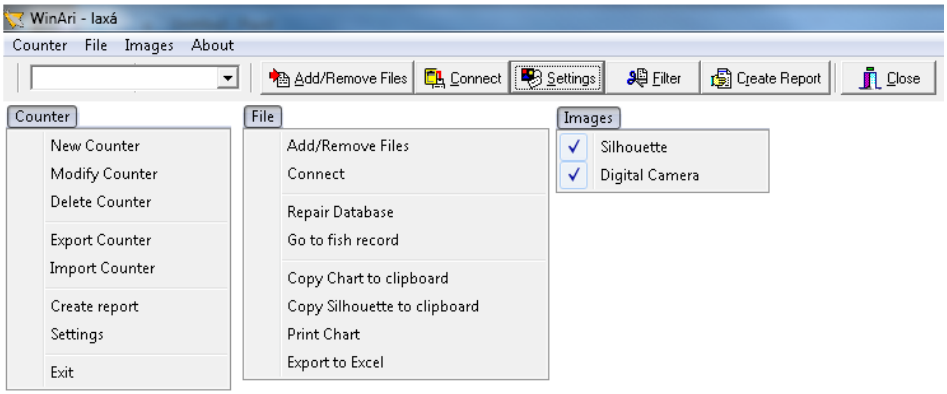
The Winari program interface is easy to use and provides excellent overview over the collected data. Moreover it includes variety of tables and charts for viewing and analysing figures and numbers. The Winari program interface is divided into three main fields;



1. Toolbar
2. The Silhouette Image Field
   The silhouette image field gives information about the size and...
3. The Digital Camera Field
   The digital camera field provides you with the possibility to distinguish between different species and group the fish in predefined groups.
4. The Table / Chart Field
   Shows detailed information on each fish. Five different charts shows the whole season, time of day, missing one, size graph and compare more than one season together.

2.2 TheToolbars

The main toolbar shows: counter, file, images, and about buttons. These buttons will be described in this chapter 3.1.The button toolbar is part of the silhouette image field and is described in chapter 4. Has a shortcut on the other toolbar except the empty window and the filter button.



2.2.1 Counter

New counter:
Here can you add the counters that are used in the database of the program. They are given name, description, phone number and counter number.

Modify counter:
Here can you modify the counters that are used in the database of the program. They are given name, description, phone number and counter number.

Delete counter:
Here can you delete the counters that are used in the database of the program.

Export counter
Here can youexport counter to another computer/user?

Import counter
Here can you import counter from another computer/user?

Create report:
Here can you report that statistics of fish swimming up and down the river. Statistical graphs are also drawn up. The fish amount versus time.

Settings:
This is used to change the name or size-range of the categories, choose other colours for the charts and set the communication port (COM port) to be used for data transfer to the computer. In addition the user can choose length/depth constant for each fish group. This constant is used to calculate the length of the fish by using measured depth. Under settings it is also possible to change some settings on the charts.

Exit
For exit and close down the program. This does not affect the work done in the database.

2.2.2 File

Add remove files:
By adding files in the database the user is able to analyse silhouette images of each fish, and sort the fish in different groups by the look. It is possible to add several files to the same database, and make several databases for different counters. In this database it is possible to look at each single fish, in addition to other registrations such as depth, speed, position in the counter, swimming direction etc.

Connect:
This function is used for download data from the control unit. When data is downloaded four types

of file exist. Each with a different function and they are stored in the same folder. If the control unit is fitted with a connection to a (mobile) telephone and modem, then it is possible to dial up a connection to the counter at any time for monitoring and data collection.

Go to fish record:
Select date to go to, to see counted fish in on that date.

Copy chart to clipboard:
Here you can copy the active chart to the clipboard and then paste it if working with other documents.

Copy Silhouette to clipboard:
This module is used to copy silhouette to clipboard.

Print Chart:
This module is for printing the active chart.

Export to Excel:
This module exports data to excel.

2.2.3 Images

Silhouette:
Here you can able / disable the silhouette image field from the main program interface.

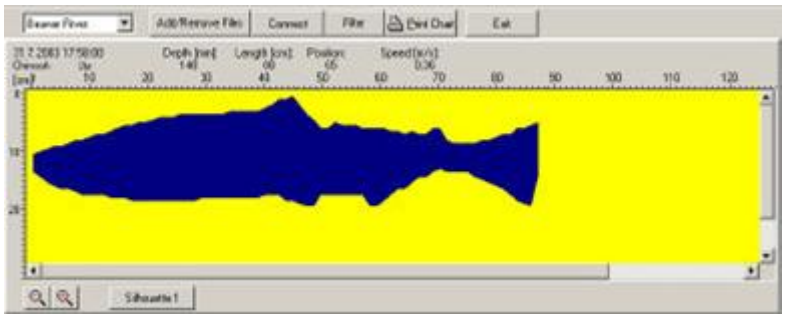
Digital Camera:
Here you can able / disable the digital camera field from the main program interface.

2.2.4 About

This gives information about the current edition of the program in use, and about VAKI.The Winari program is designed for Windows 95/98/W2K/XP and consists of following main modules.

2.3 The silhouette image field

To toolbar over the silhouette image field are shortcuts fromthe main toolbar except the filter button and the silhouette button.This chapter will go through the lower menu bar and the silhouette image field.



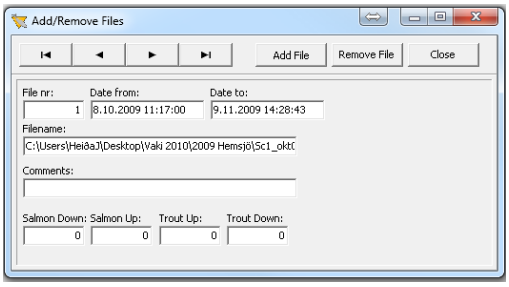
2.3.1 The Window

Choose active river watcher.

2.3.2 Add/Remove files

It is possible to build a database for each fish counter created, and sort the registrations in predefined groups using the silhouette images of each fish.

When new data is downloadedinto the program, press"Add/Remove Files" and thefollowing is displayed. If the data from the Control Unitare downloaded every week, newsets of files are made every time(arv, img, tdt, vsb) and theytogether make the database. In this window you can remove or add new files(measurements) and comments. The "File nr:" is the number of the file that is beingimported to the database.



2.3.3 Connect

2.3.3.1. The files

The following four types of file are stored in the folder when data is transferred from thecontrol unit.

.arvfiles, which contain data on the size of the fish, the time of registration andthedirection the fish, were swimming and the position in the scanner frame. These are the main files for each record.

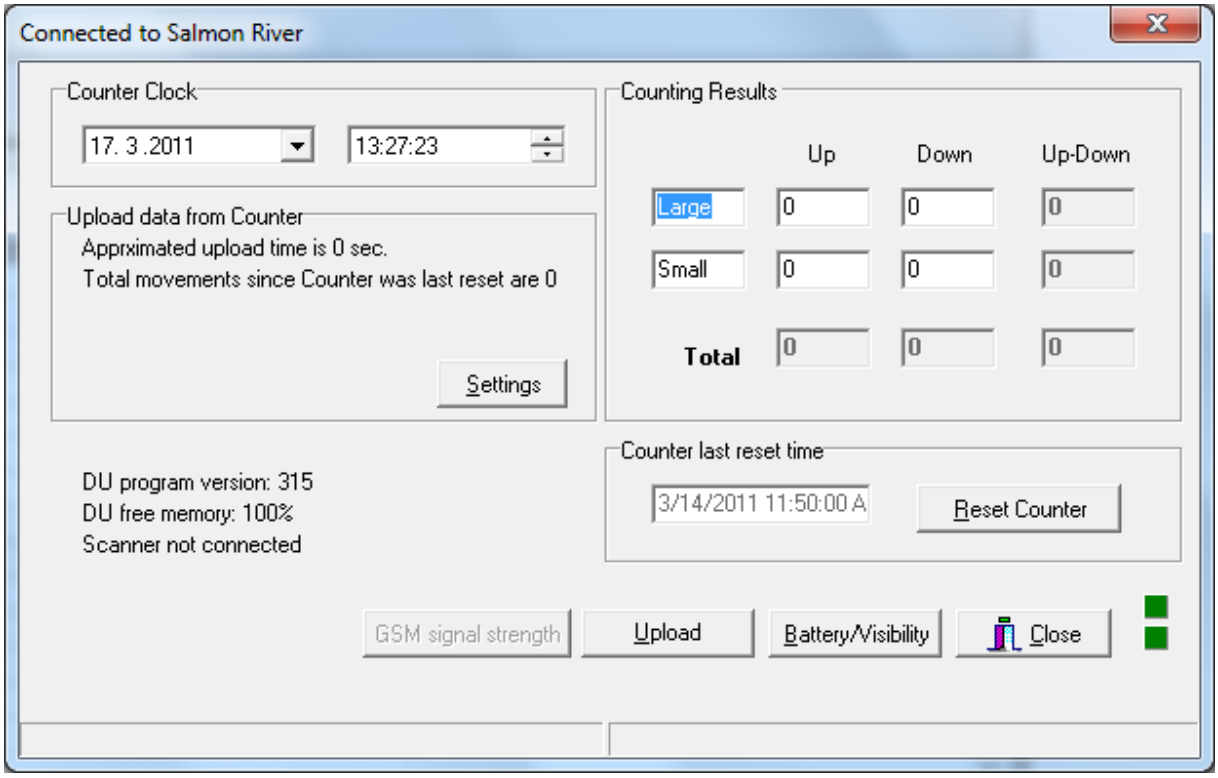
.imgfiles, which contain a silhouette image of each fish, this makes it possible toexamine and sort all the fish recorded, and count them to check the numbersrecorded automatically by the counter.

.vsbfiles, which containdata from the “visibility test”, this can be used to checkwhether all the LEDs (light-emitting diodes) were functioning properlyduring the period whenregistrations were made. The storing capacity in the
vsb file is 100 days.

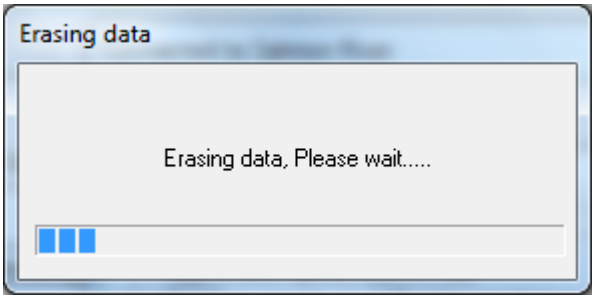
.tdtfiles, which contain temperature records for the period, the temperature isrecorded automatically every three hours, and the file can store 2.000registrations. The storing capacity in the tdt file is therefore more than eightmonths.

2.3.3.2. Direct connection

To retrieve data from the control unit, connect it to the computer using the transfer cableand the appropriate COM port. Switch on the control unit and click the “Connect” optionin the program. The following will appear on the screen.



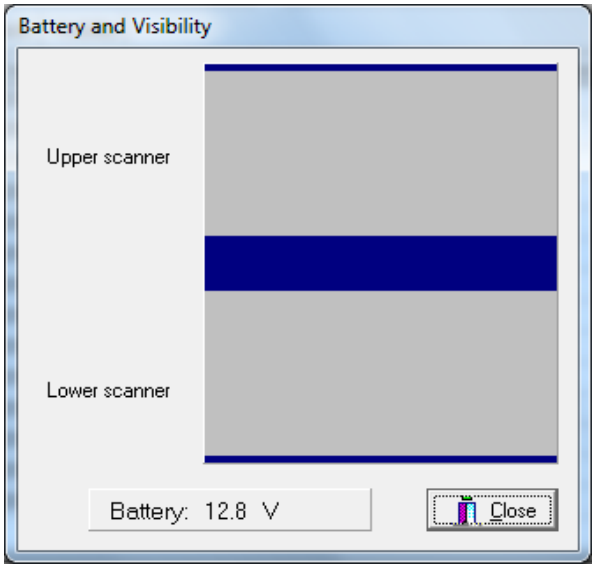
The date and time of the day on the control unit (DU Clock) will appear automaticallyunder “Counter Clock”. It is important to check if the DU clock and the date are right, ifnot it has to be changed.

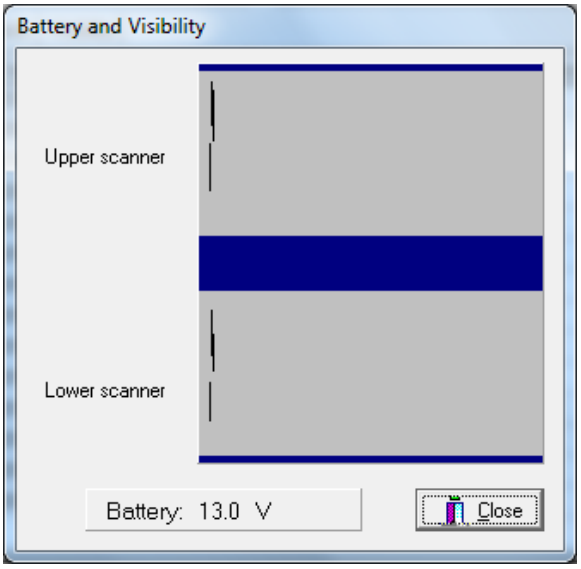


"Counting Results" are displayed automatically, and shows the status on the controlunit's display. It does not have to be the same numbers as on the file that is transferred,since it is possible to reset the control unit from the computer. That might be preferred ifyou want to show on the DU the total migration for the whole period, but the memory is erased after each downloading.Counter last reset time shows the date and time of last reset.

By pressing "ResetCounter" *all data from the control unit areerased*. Do not erase data before all filesare securely downloaded and saved. By pressing the "Battery/Visibility" button you can check the power on the battery, andalso run a test that tells you if all the diodes are functioning right.

The green dots in thelower right corner indicate activity on the serial port. The following test is shown for eachof the two diode-rows. In the example to the left everything is OK and nothing isblocking the diodes, but in the example to the right something is blocking the highest part of both diode-rows.





"View Data" shows in a graphical way the file that is being transferred from the controlunit (see charts under chapter 3.5.). Under "Settings" you can choose which file types youtransfer from the control unit, while pressing "Upload" starts the transmission. All filesare given a name based on the name of the river and the date when the data is transferred;these may be altered as in other Windows programs. If the names are changed, then it isimportant that the four files from each downloading have the same name.

2.3.3.3. Modem connection

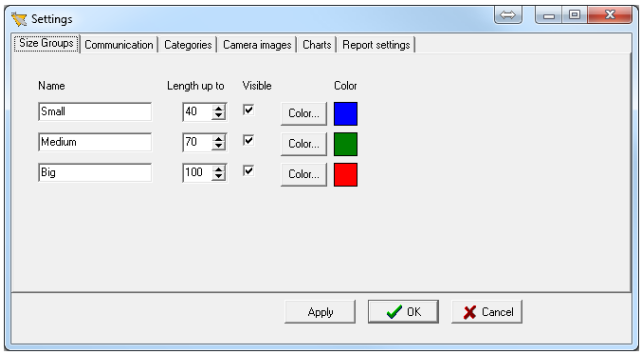
If the control unit is fitted with a telephone connection and a modem, then it is possible todial up a connection at any time to download data from the control unit at any time or forregular checking.Insert the counters telephone number and press“Dial”.When connection is made between thecontrol unit and the computer the picture from chapter 3.3.2 is displayed. All the functions arethe same as with direct connection.When downloading big files via mobile modem, some problems may occur if thetelephone connection is bad. Then it is better to download more frequently and erase thememory after each download.

2.4 Settings

This is used to change the name or size-range of the categories, choose other colours for the charts and set the communication port (COM port) to be used for data transfer to the computer. In addition the user can choose length/depth constant for each fish group. This constant is used to calculate the length of the fish by using measured depth. Under settings it is also possible to change some settings on the charts.

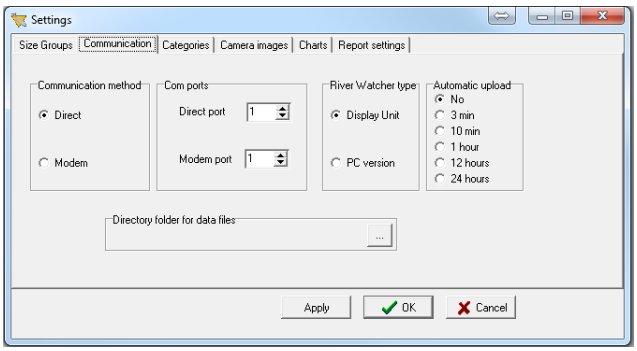
2.4.1 Size Groups

Use this option to change the names or size boundaries of the categories, and to determine which of them are to be displayed on the charts. You can also choose different colours to represent each category.



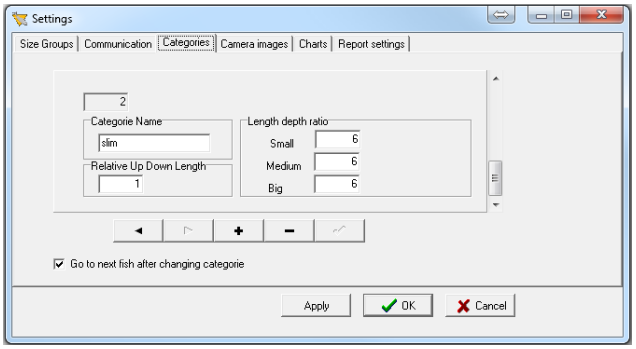
2.2.1 Communication

In this window you can choose communication method, either through the serial port or a modem. You can also choose which COMport on the computer to use when downloading data and which port to connect the modem to if the counter has a built- in telephone.



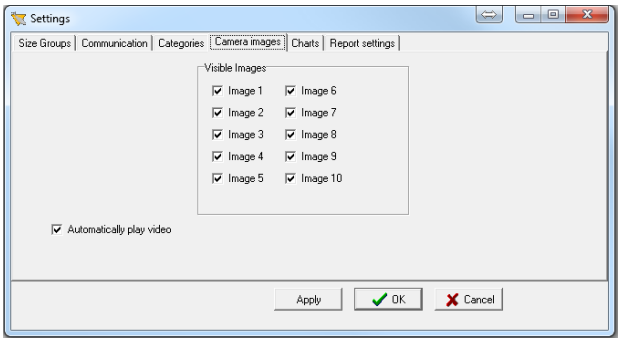
2.2.1 Categories

Here you can change the length/height ratio, which is used to calculate the length of the fish on the basis of their measured height. It is possible to use different constants for each size groups of the sorted fish groups. This may be desirable if there are different relations between depth and length between fish groups, and between size groups within fish groups. It is also possible to set a relative constant for calculations of the length according to the swimming direction. If fish is calculated smaller on the way down then by changing this constant to e.g. 1.3 the program will calculate the size of all down fish 30% bigger. This can be appropriate if the fish has to jump into the scanner frame and therefore the shadow is deeper than the shadow of the same fish swimming down.



2.2.1 Camera images

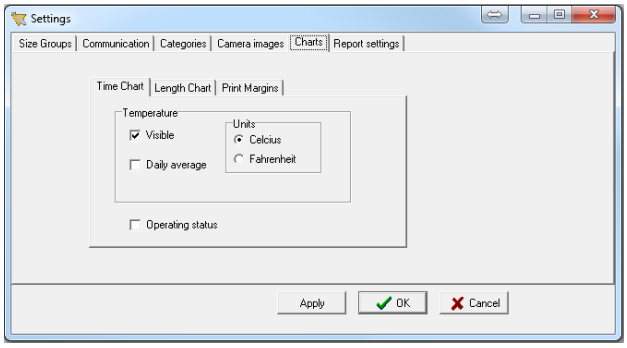
In Camera images you can choose how many images are shown in the digital camera field of the program.



2.2.1 Charts

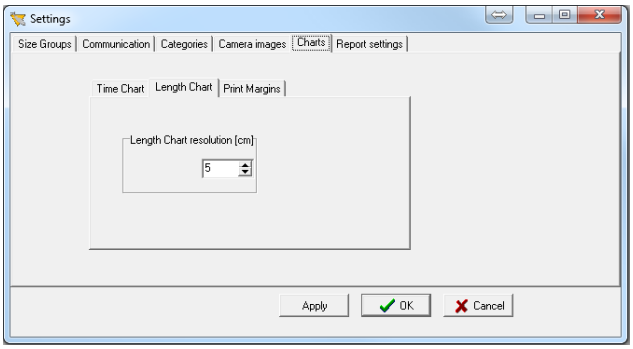
2.4.5.1 TIME CHART

Select the settings for the temperature shown in the charts, Celsius or Fahrenheit. Also it is possible to select daily average or measurements with three hour intervals shown. Activate the operating status to see the results from the VSB file on the chart. And under “Length Chart” It is possible to set their solution in the length chart.



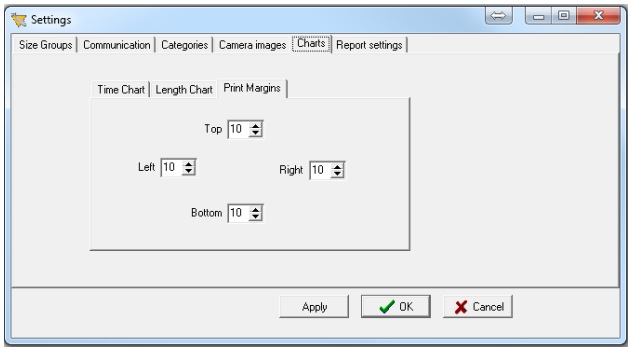
2.4.5.2 LENGTH CHART

To choose charts length resolution, change the value in the length Chart resolution (cm) window.



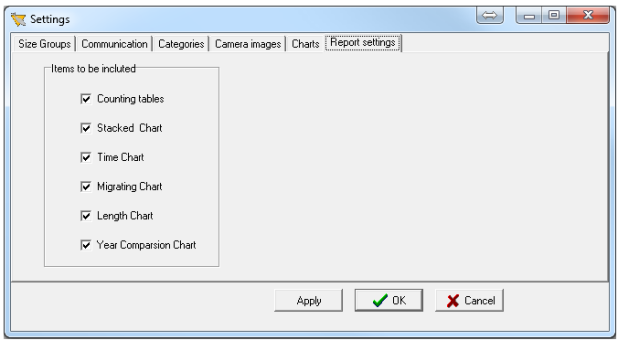
2.4.5.3 PRINT MARGINS

To change the charts placement on the reports choose the distance value on top, left, Right, bottom.



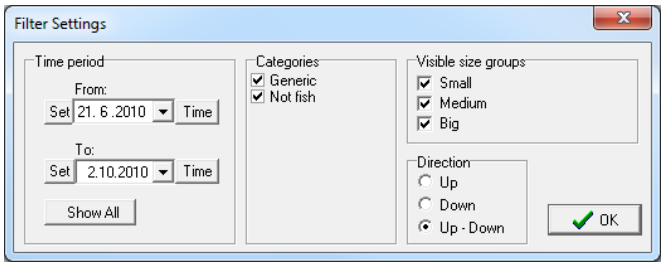
2.4.5 Report settings

To choose what information´s are shown on the Reports go to Report settings. Available information's for the reports are: Counting tables, stacked chart, Time Chart, Migrating chart, Length Chart and Year comparison Chart.

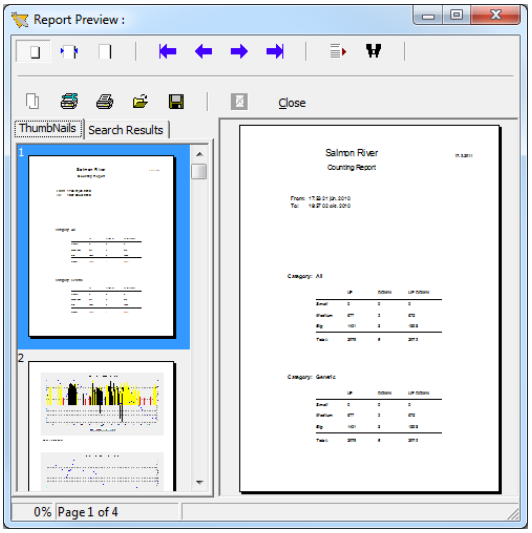


2.4.5 Filter

In the program it is possible to work with the whole database or selected part of it by selecting the group from the "Categories". By "Timeperiod" you can also choose a certain time period to look at. Select also the direction and size groups to look at in the charts.



2.5 Create Report



2.5.1 PRINT

Shortcut to print out reports

2.5.2 EXIT

2.6 Silhouette

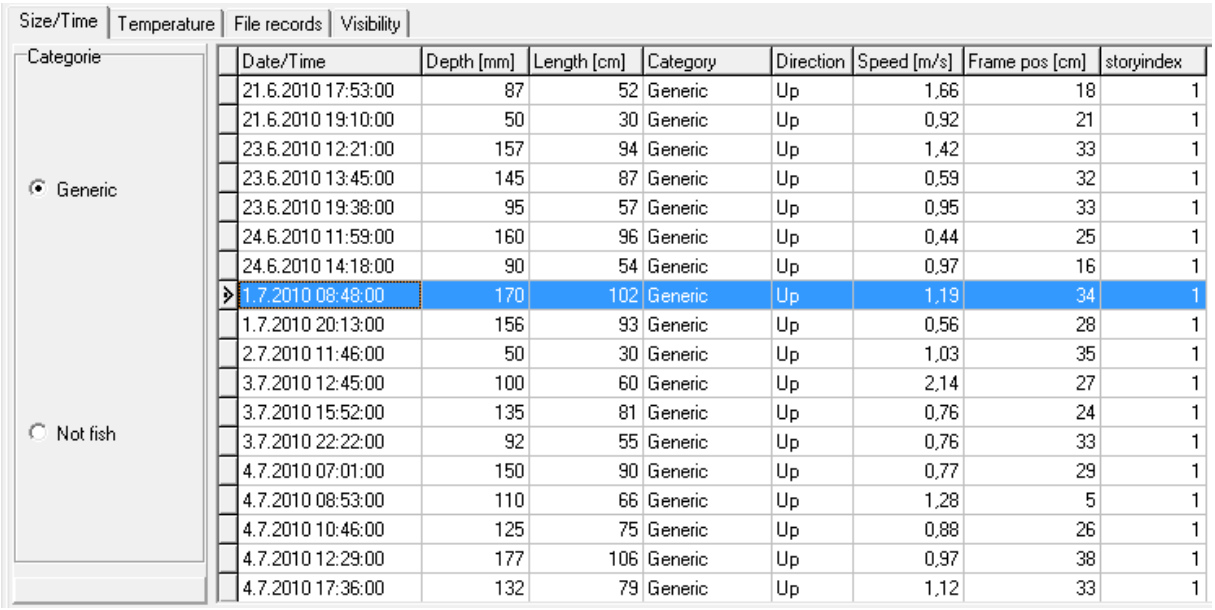
By pressing the silhouette button the silhouette field/screen shows,no silhouette, silhouette one silhouette two or both silhouettes at the same time.

2.7 Table field

The “Table field” beneath the silhouette image shows the date and time for each passing fish, the depth and calculated length (Depth x “Length/depth” ratio under”Settings”) in addition to categories, swimming direction, speed, the position in the scanner and the number of the file in the database.

Under **“Categories”** to the left of the table, there is a possibility to sort the fish in differentgroups (species), using the silhouette image and other information from the data file. Under certain circumstances the counter can register some disturbances in the water surface or objects that are not fish. Then it is possible to go through the silhouette images and manually sort these registrations, either as “Not Fish” or delete them from the database.

The table beneath the silhouette image has four fields; Size/Time, Temperature, File records and Visibility.



Date/Time	Depth [mm]	Length [cm]	Category	Direction	Speed [m/s]	Frame pos [cm]	storyindex
21.6.2010 17:53:00	87	52	Generic	Up	1,66	18	1
21.6.2010 19:10:00	50	30	Generic	Up	0,92	21	1
23.6.2010 12:21:00	157	94	Generic	Up	1,42	33	1
23.6.2010 13:45:00	145	87	Generic	Up	0,59	32	1
23.6.2010 19:38:00	95	57	Generic	Up	0,95	33	1
24.6.2010 11:59:00	160	96	Generic	Up	0,44	25	1
24.6.2010 14:18:00	90	54	Generic	Up	0,97	16	1
1.7.2010 08:48:00	170	102	Generic	Up	1,19	34	1
1.7.2010 20:13:00	156	93	Generic	Up	0,56	28	1
2.7.2010 11:46:00	50	30	Generic	Up	1,03	35	1
3.7.2010 12:45:00	100	60	Generic	Up	2,14	27	1
3.7.2010 15:52:00	135	81	Generic	Up	0,76	24	1
3.7.2010 22:22:00	92	55	Generic	Up	0,76	33	1
4.7.2010 07:01:00	150	90	Generic	Up	0,77	29	1
4.7.2010 08:53:00	110	66	Generic	Up	1,28	5	1
4.7.2010 10:46:00	125	75	Generic	Up	0,88	26	1
4.7.2010 12:29:00	177	106	Generic	Up	0,97	38	1
4.7.2010 17:36:00	132	79	Generic	Up	1,12	33	1

3.7.1.Size/Time

The first field shows the date and time for each registration. ”Depth” shows the scannedheight of the fish in mm, ”Length” shows calculated length in cm (Depth * L/D ratio foractual size group), “Category” shows in what group the fish was sorted, ”Direction”shows the swimming direction, “Speed” is shown in m/sec, ”Frame pos.” shows theposition of the fish in the scanner frame, e.g. the number of the uppermost diode used todraw up the silhouette image of the fish. The diodes are 96 in each row, no. 1 is at thetop, and no. 96 is at the bottom. ”File nr” shows which file in the database you areworking with. It is possible to sort the database by pressing the top of any column, e.g. bysize or direction. It is also possible to select many fish at the same time (mark them blue)if the database is being sorted. Just hold down the Ctrl button while selecting lines with amouse-click.

3.7.2. The temperature

field shows the date and time for each temperature registration, ”Temp” shows the electrical value from the scanner used for calculating the temperature in Celsius or Fahrenheit shown in “Calc Temp”, and ”File nr” shows which file in the database you are working with.

Size/Time | Temperature | File records | Visibility

DateTime	Temp	calctemp	storyindex
2.10.2010 18:00:00	30	6	1
2.10.2010 21:00:00	29	5,8	1
3.10.2010	29	5,8	1
3.10.2010 03:00:00	29	5,8	1
3.10.2010 06:00:00	29	5,8	1
3.10.2010 09:00:00	28	5,6	1
3.10.2010 12:00:00	29	5,8	1
3.10.2010 15:00:00	29	5,8	1
3.10.2010 18:00:00	28	5,6	1
3.10.2010 21:00:00	28	5,6	1

3.7.3. ”File records”contains the counting result from each file that make the database, and information on measuring period, comments and where to find the file.

Size/Time | Temperature | File records | Visibility

Indexin	Startdate	Enddate	MissStartdate	MissEnddate	Salmup	Salmdown	Troutup	Troutdown	BatteryV	comments
1	11.6.2010 15:59:00	15.10.2010 14:16:00			800	4	441	1	0	

3.7.4. The”Visibility”

field shows if the light emitting diodes have been functioning right during the period.

Size/Time | Temperature | File records | Visibility

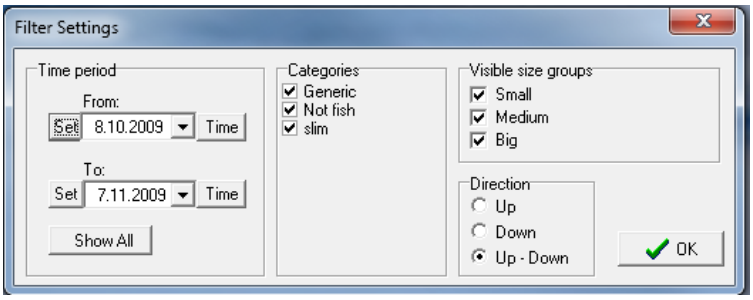
DateTime	vsb1	vsb2	batt	storyindex
24.9.2010	0	0	56	1
25.9.2010	0	0	58	1
26.9.2010	0	0	60	1
27.9.2010	0	0	61	1
28.9.2010	0	0	62	1
29.9.2010	0	0	63	1
30.9.2010	0	0	62	1
1.10.2010	0	0	61	1
2.10.2010	0	0	61	1
3.10.2010	0	0	63	1

Each line represents one day, and Scanner 1 and Scanner 2 have one column each. If the value is 0 the diodes are functioning right, but other numbers show which diodes have been blocked for more than 30minutes in one - hour period. ”Battery faults” can either show 0 or 1, where 0 means that the Voltage has been higher than 11.2 Volt, while 1 means that the Voltage has fallen under 11,2 V. This test saysnothing about how long the Voltage has been under the limits; only it has been under for some period that particular day. ”File nr” is as before to show which file in the database you are working with.

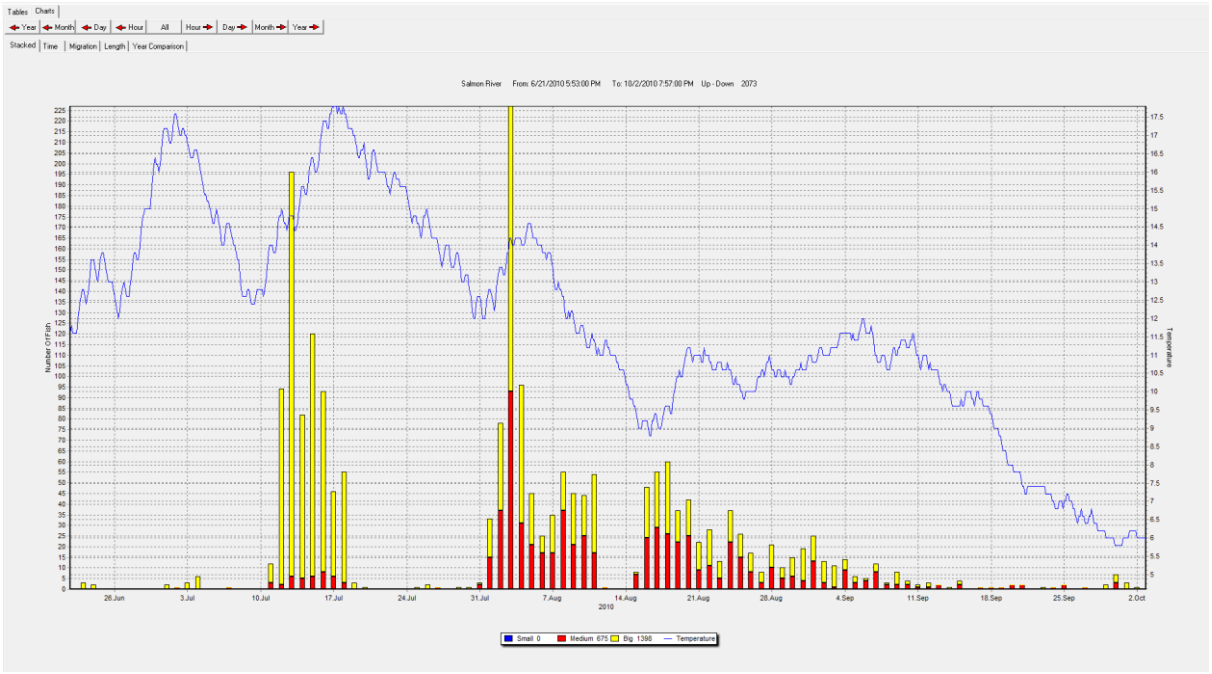
2.8 The Chart field

By pressing „Charts", the chart- module is opened, but only for the sort-categories(Generic, Not Fish, etc.) or/and the period that is active in the database (set under „Filter"). For more details see chapter 3.7.

3.8.1 Stacked Chart



This chart shows the migration patterns of the fish, either for the full period or over aselected part of it. On the Y-axis the number of fish in each size group is shown per day,and the date is on the X-axis. Press the "Filter" button to examine all categories togetheror one at a time, and you can setthe boundaries for the category sizes (see chapter 3.6 Settings).Use the Year, Month, Day andHour buttons to examine particular periods in greater detail.



The "Operating Status" (green bar on the X-axis) shows how the system has beenperforming over the period. If the light diodes have been blinded for more than 20minutes of the last 60 minutes, then the green bar turns to red for that day. It also happens if thepower of the deep cycle battery has gone under 11.2 Volts.

3.8.2. Time Chart

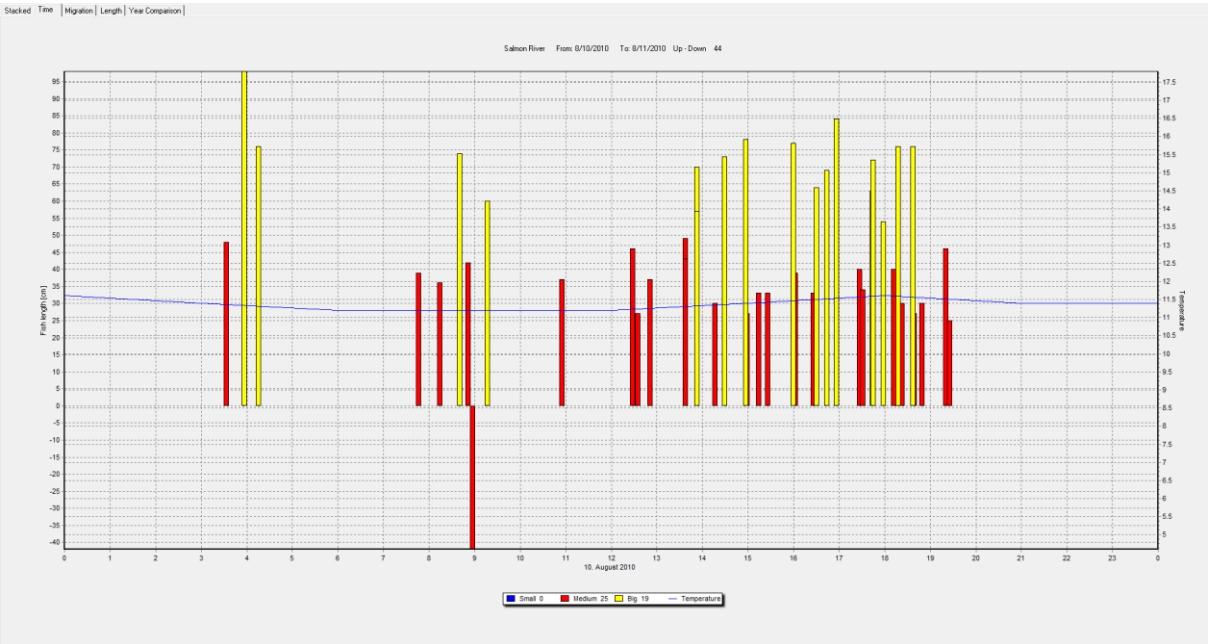
This chart shows the migration pattern of the fish over the period related with the lengthof the fish. The length of the fish is shown on the Y-axis and time on the X-axis. Positivelengths denote ascending fish and negative lengths descending fish.

Each columnrepresents one fish; click on a column for the image of each fish and information aboutthe length, the registration time, size category, depth in scanner and swimming direction.

The fish may be divided into three size categories as specified by the user (under“Settings”). Specific periods may be selected by clicking the buttons for Year, Month, Day and Hour.
To enlarge individual parts of the display, hold the left mouse buttondown and drag the mouse pointer downwards and to the right. To restore the full display, hold the left mouse button down and drag the mouse pointer upwards and to the left.
Toexamine earlier or later periods, hold the right mouse button down and drag the mousepointer to the left or right.

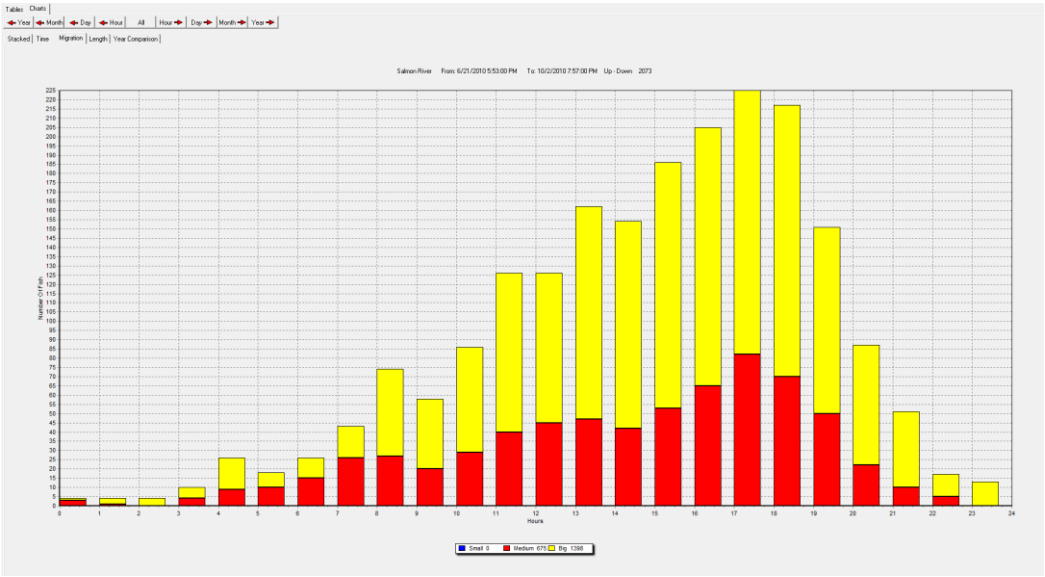
The size categories can be changed easily by altering the specified length boundaries.Also, you can specify the categories to be examined by clicking the “Visible size groups”field in “Settings”.

Under “Direction” you can choose whether you examine fish thatclimbed or descended the ladder, or both together, which is the most common setting.



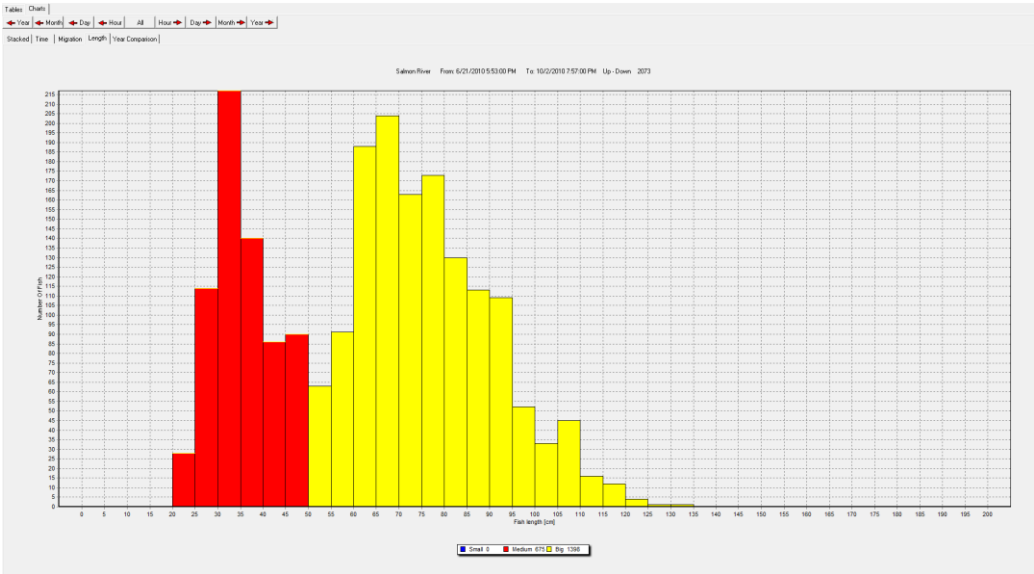
3.8.3. Migration Chart

This shows the time of the day when the fish were recorded. As with the previous charts,you can examine a particular period or size category in greater detail and choose betweenfish passing up or down the ladder or examine both groups together.



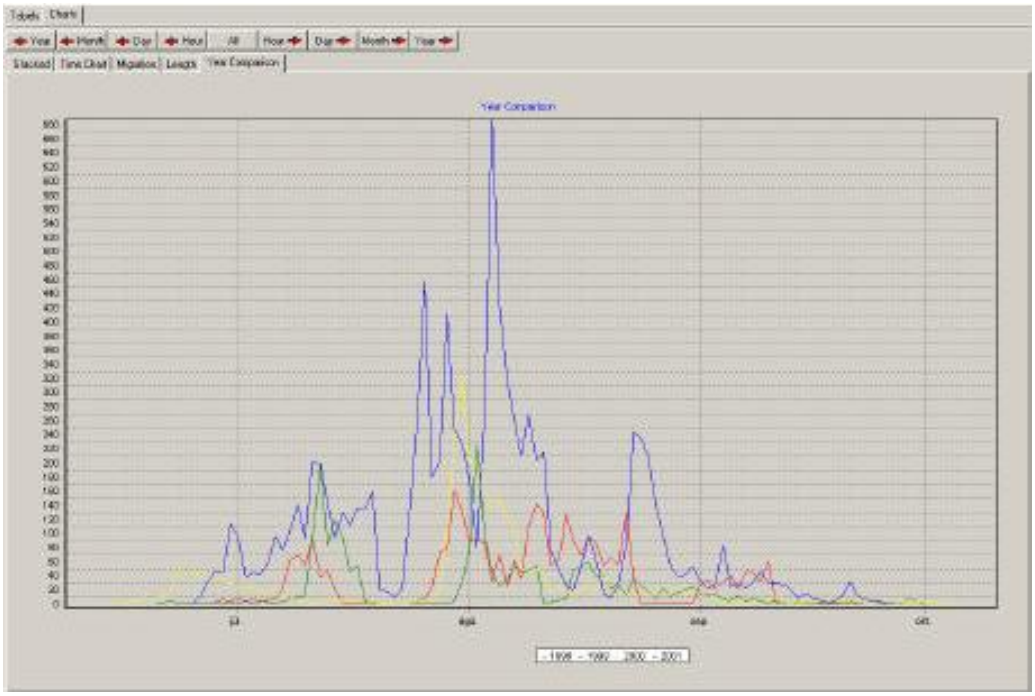
3.8.4. Length Chart

This shows the breakdown of the fish by size category. In addition to examining one ormore size categories in greater detail, and using the Year, Month, Day and Hour buttonsto select periods, you can also alter the units on the X axis and set them from 1 to 10 cmaccording to the category you wish to examine (under Settings).



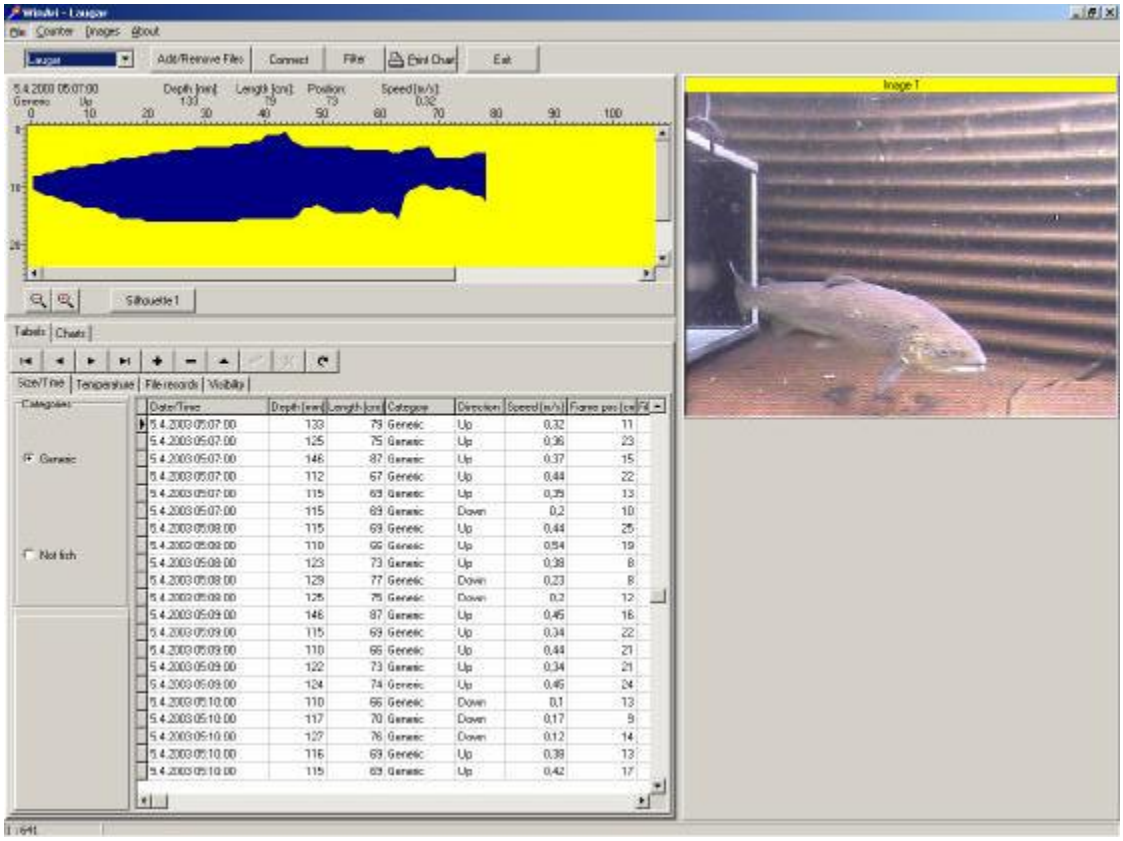
3.8.5. Year Comparison Chart

This chart shows the comparison of the migration pattern between years, just add files tothe database for the wanted periods.



3 Underwater camera connection (optional)

An option to the Riverwatcher is to connect an underwater camera to the system. Thenthe scanner is used as a trigger for the camera that takes up to five pictures of the fish.Then the photos are linked to the silhouette image drawn by the infra-red scanner, so itbecomes possible to identify species, sex and other information of value to the user. Thisis only possible with a special PC version where a computer with a special programreplaces the yellow control unit.The advantage of this method is that the user, who examines the data, can quickly gothrough the photos and analyse them on the computer. Information is automaticallystored in a database file among other data on time of passage, size, temperature and asilhouette image of the fish from the infrared scanner. Graphs of the migration pattern canbe viewed immediately. For instance:as total number of fish by species, orgender. The size distribution of each fish species can be viewed andwater temperature changes over the season. Having all the information stored in onedatabase with digital images, greatly reduces the work required to analyse date on fishabundance and gives more reliable information behaviour pattern of fish in a complex riverecosystems.



The setup of the camera is critical, and there are several factors that can affect the quality and resolution of the pictures.

1. The placement of the camera

To obtain the best pictures the distance from each fish to the camera must be thesame all the time. But the placement of the camera and the camera angle can be different from fish way to fish way because of different swimming speed andbehaviour of the fish. The before it can be necessary to make some changes afterthe first installation and after viewing the pictures.

2. Intervals between pictures and number of pictures

It is possible to set the interval between the pictures and also the number ofpictures taken. If the fish swims with high speed through the scanner frame and bythe camera the intervals must be short, but if the fish even stops in front of thecamera then the intervals should be longer. This is something that has to be setspecially for each installation.

3. Light conditions

The camera that is used to take pictures uses infra-red light when the lightcondition gets poorer. To get optimal resolution it might give better results toinstall an extra infra-red light or a regular light with the camera, especially if thefish is migrating during the night and late in summer/autumn. This is differentbetween installations.

4 Error sources

There are different errors that can occur while using the program.

4.1 Error in line

Sometimes it can happen that an error occurs in some of the lines in the ARV file. This is usually caused by bad connection over modem. Below is an example of ARV file withtwo error lines (file A). This error is easy to fix, all the columns have to be linear so inFile B both the lines have been fixed. If there are some data missing from a line, then thedate put in the new line must be in accordance with the date and time in the lines beforeand after.

The meaning of the columns in the file are **A**:Fish height **mm**, **B**:Scanned length **cm**,**C**: Position in frame, **D**:Month, **E**:Day, **F**:Hour, **G**:Minute, **H**:+/- up or down, **I**:Code

[river]	***Name of counter***
North ladder	
[date]	***Date of download***
21/08/2003	
[time]	***Time of Download***
12:39:00	
[Startdatetime]	***Coded reset time & date***
66977.6805556	
[Endadatetime]	***Coded download time & date***
37854.5270833	
[Count values]	
Sal.up :1730	***Fish numbers counted in this file***
Tr. up :51	
Sal.dwn :6	
Tr. down :8	
[comments]	
[images file]	***Names of the related image, temperature and counter status files***
North ladder_20030821.img	
[visability file]	
North ladder_20030821.vsb	
[temperature file]	
North ladder_20030821.tdt	
[data]	

0	3	7	30	16	20	***Date & time of last counter reset***

File A

A	B	C	D	E	F	G	H	I
102	53	44	6	29	7	55	+	16
110	43	47	6	29	8	0	+	16
90	51	16	6	29	9	47	+	16
127	57	59	6					
95	52	72	6	29	10	10	+	16
96	71	69	6	29	10	14	-	0
102	52	47	6	29	10	25	+	16

File B

102	53	44	6	29	7	55	+	16
110	43	47	6	29	8	0	+	16
90	51	16	6	29	9	47	+	16
127	57	59	6	29	10	2	+	16
95	52	72	6	29	10	10	+	16
96	71	69	6	29	10	14	-	0
102	52	47	6	29	10	25	+	16

NB! *The ARV files are the raw-data from the counter. If they are to be changed or altered then make a copy of the original one, and make changes to the copy.*